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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/700,926	11/21/2000	Hakan Lovsen	1807-0151P	3060

2292 7590 11/19/2003

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EXAMINER
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ALSOMIRI, ISAM A

ART UNIT	PAPER NUMBER
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3662

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/700,926

Applicant(s)

LOVSEN, HAKAN

Examiner

Isam A Alsomiri

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

**Claims 1-3 and 6-8 are rejected under 35 U.S.C. 102(a) as being anticipated by Kupfer US 5,784,022. Referring to claim 1,** Kupfer discloses in figure 5 two array antennas for determining the position of a vehicle by using radio waves which are emitted from the device and reflected by the vehicle and received by at two array antennas [Afa and Afb], the array antennas comprise a number of antenna elements, one of the antenna elements in the respective array antenna constituting the phase center of the array antennas [AE5 and AE7], and wherein the antenna elements of the array antennas are connected to one another such that the distance between the phase centers of the array antennas included is smaller than half the width of an individual array antenna (see figure 5, Abstract).

**Referring to claim 2,** Kupfer discloses in figure 5, the phase center of one array AE5 is arranged among the antenna elements of another array antenna (interweaving).

**Referring to claim 3,** Kupfer discloses in figure 5, the phase centers are placed close to each other (see figure 5 [AE5 and AE7]).

**Referring to claim 6**, Kupfer teaches the azimuth angle to the vehicle is determined from an antenna position, wherein at least one pair of substantially horizontally arranged array antennas (figures 2-3 [Bb and Ba x-axis]) is arranged (see col. 7 line 50 – col. 8 line 55).

**Referring to claim 7**, Kupfer teaches the angle of elevation to the vehicle is determined from an antenna position, wherein at least one pair of substantially vertical arranged array antennas (figures 2-3 [Bc and Bd] y-axis) is arranged (see col. 7 line 50 – col. 8 line 55).

**Referring to claim 8**, it's inherent that the position of the vehicle is determined by knowledge of the azimuth angle and the angle of elevation.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kupfer US 5,784,022 in view of Ajioka US 5,270,724.** Kupfer does not teach some of the antenna elements are at the same time connected to more than one array antenna. Ajioka teaches antenna elements are at the same time connected to more than one array antenna (see Abstract, col. 1 lines 10-19). It would have been obvious to modify Kupfer to utilize some antenna elements for more than one array to have smaller number of elements which saves costs and reduces the size of the device.

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**Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kupfer US 5,784,022 in view of Ajioka US 5,270,724 and Carlson et al. US 5,166,690.** it's inherent that the antenna elements which are utilized by more than one array antenna undergo a division of on the signal on the respective array antenna because the signal is shared with all the arrays or sub-arrays of a whole array. Kupfer is silent about amplifying the signal received. However, amplifying the received signal is well known, not only the shared antenna elements but each antenna elements. Carlson teaches a radar system using an array which comprises of a number of elements, each elements has a low noise amplifier to amplify the signal right after it is received (see Abstract, and figure 2), which reads on the claimed undergo power amplification. It would have been obvious to modify Kupfer's system to include an amplifier to amplify the received signal at each element right after it is received (which is before it is divided) to obtain a clear stronger signal for detection and processing.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited to (Yoshida et al.; Nishikawa et al.; Strauch et al.) show various radar systems for detecting target positions using antenna arrays.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isam A Alsomiri whose telephone number is 703-305-5702. The examiner can normally be reached on Monday-Thursday and every other Friday (8:30-5:00).

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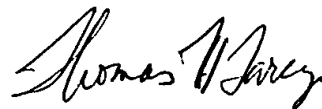
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H Tarcza can be reached on 703-306-4171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9326.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

Isam Alsomiri

*HA*

November 12, 2003



THOMAS H. TARCZA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600